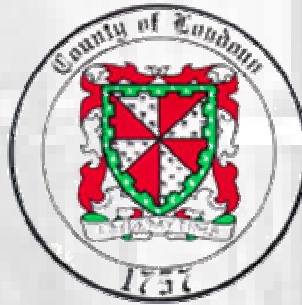


Augusta Drive Traffic Safety Improvements

ATTACHMENT 2

REVISED DRAFT—May 2004



Prepared by the Loudoun County
Office of Transportation Services

BACKGROUND

The Westerley HOA sent a letter on June 18 requesting various traffic safety improvements along Augusta Drive. In the letter, they remarked that Centex Homes was nearing release of their bond for this road and that pedestrian crossing safety is at issue. Specific improvements requested were a multi-way stop sign at the Northbrook Way/Antioch Place intersection and a “manually operated pedestrian stop light” at the Mountain Laurel/ Vermont Maple intersection. This letter was forwarded to Office of Transportation Services staff for further consideration.

Augusta Drive is an urban, four-lane, undivided (U4) road in the Countywide Transportation Plan (CTP). Its design speed is 40 mph and its posted speed is 35 mph. Together with Seneca Ridge Road and Cottage Road, it provides access to and from the CTP road network for most of the communities bounded by Route 7, Potomac View Road and Sugarland Run.

In addition to Mr. Villegas’s letter, OTS staff is aware of two other issues associated with Augusta Drive that pertain to the opening of Seneca Ridge Middle School and Dominion High School. Area residents report there is a cut through traffic problem along Mayapple Place and Duckspring Way due to traffic attempt-

ing to circumvent school induced congested conditions. There is also a concern regarding pedestrian crossing safety for children walking to and from the schools.

ISSUES

As a result of staff analysis, supplemented by feedback received through an extensive public outreach campaign, the following four issues were identified for corrective action:

1. Speeding,
2. Lighting (as identified by citizens),
3. Issues specific to Mayapple Place/Duckspring Way (i.e., cut-through traffic, and bicycle/pedestrian traffic crossing Augusta Drive), and
4. Pedestrian circulation (i.e., missing sidewalks, and the need to serve the Westerley pool/common area)

In addressing these problems, staff recommendations needed to recognize Augusta Drive's well defined role in the CTP. Further, traffic operations associated with Route 7, the Route 7 North Collector Road, the aforementioned schools, and Seneca Ridge Drive needed to be taken into consideration in the

design of any measures intended to improve pedestrian circulation and/or eliminate cut through traffic.

The Office of Transportation Services presented a draft set of improvement strategies at the November 24 Board of Supervisors Transportation Committee meeting (see Table 1). The net effect of these changes was to reduce the number and types of pedestrian/vehicle and vehicle/vehicle conflict locations without unreasonably inconveniencing either pedestrians or drivers.

Table 1—Augusta Drive Phased Traffic Safety Improvements, Initial Draft 11/24/03

	Phase 1	Phase 2	Phase 3
Trigger	Immediately	After bond release	Route 7 N Collector Rd construction
Improvement	<ul style="list-style-type: none"> • Crosswalk striping • Stop bars and stop signs • No right turn sign • No left turn pavement markings • Pedestrian warning signs • Cone and tape traffic guidance islands 	<ul style="list-style-type: none"> • Streetprint® crosswalks • Install raised islands • Install sidewalk from Antioch Place to Maple Leaf Place (future North Collector Road) 	<ul style="list-style-type: none"> • Crosswalk warning lights (pedestrian activated, solar powered) • Streetprint® crosswalks at Maple Leaf Place/Sweet Birch Terrace intersection
Funding required	\$30,000	\$160,000	\$50,000
Funding source	Traffic Signal Contingency Fund	To be determined	Incorporated in cost of Route 7 North Collector Road

This set of draft recommendations was presented at a Community Information Meeting held on March 10, 2004. Written comments were collected over the subsequent two-week period and are summarized under separate cover. This document presents a revised set of recommendations for the Safety Improvement Project that reflects both staff analysis and citizen input.

FUNDING

On November 24, 2003, the Board of Supervisors Transportation Committee endorsed obligating \$30,000 from the Traffic Signal Contingency Fund to accomplish the first phase of the draft improvements. In addition, on February 17, 2004 the Board of Supervisors endorsed submitting a TEA-21 Enhancement grant request to VDOT for \$48,000 toward the second phase of the project. These funds would provide 80 percent of the cost to construct sidewalk along the east side of Augusta Drive, between Antioch Place and Maple Leaf Place.

Identified Concern #1:

SPEEDING

**Proper Use of Multi-Way
Stop Signs**

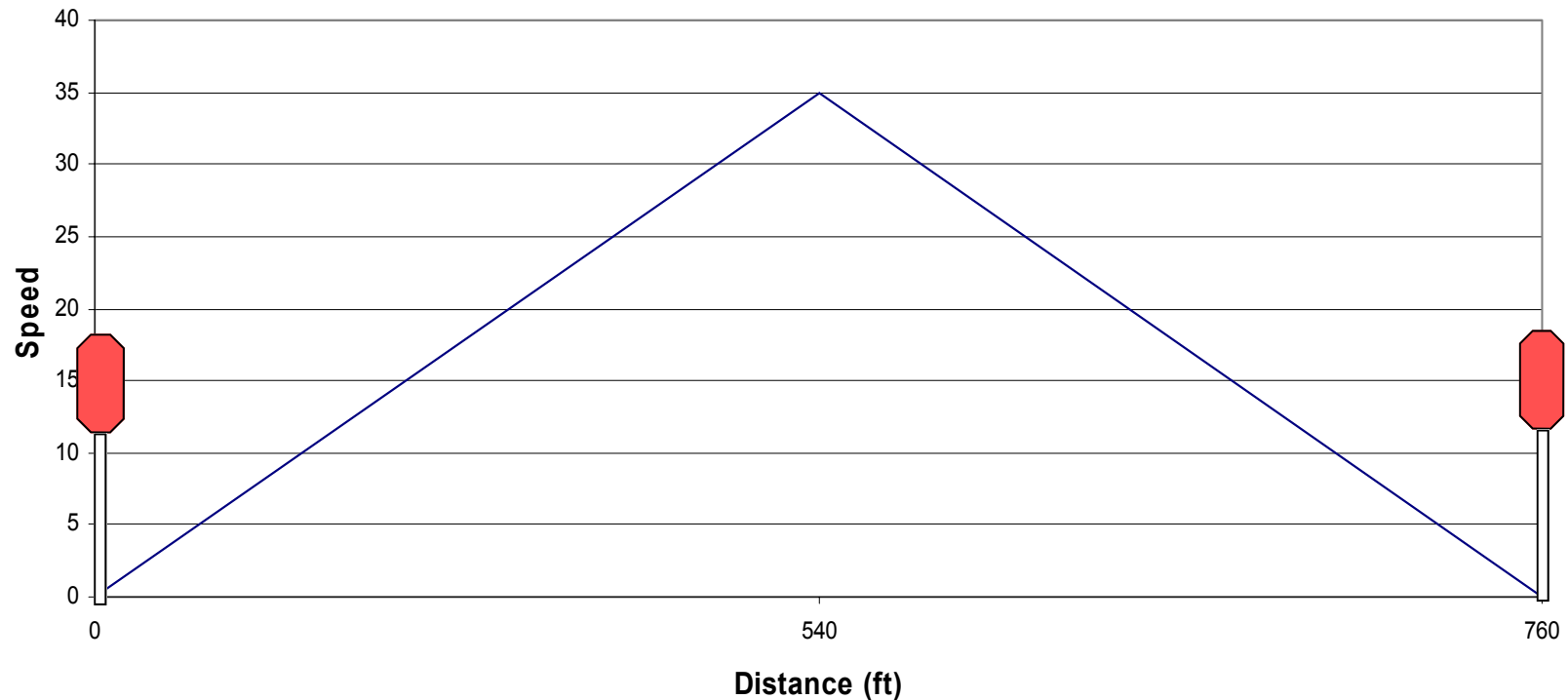


SPEEDING

Speeding along Augusta Drive was an issue identified in the course of staff analysis of the study area. Based on recent observations, the 85th percentile speed for average daily conditions along Augusta Drive was 44.97 mph, which partially satisfies the Manual of Uniform Traffic Control Devices (MUTCD) criteria for multi-way stop sign installation. Overall, 41.4% of observed traffic traveled at speeds of 40 mph or greater.

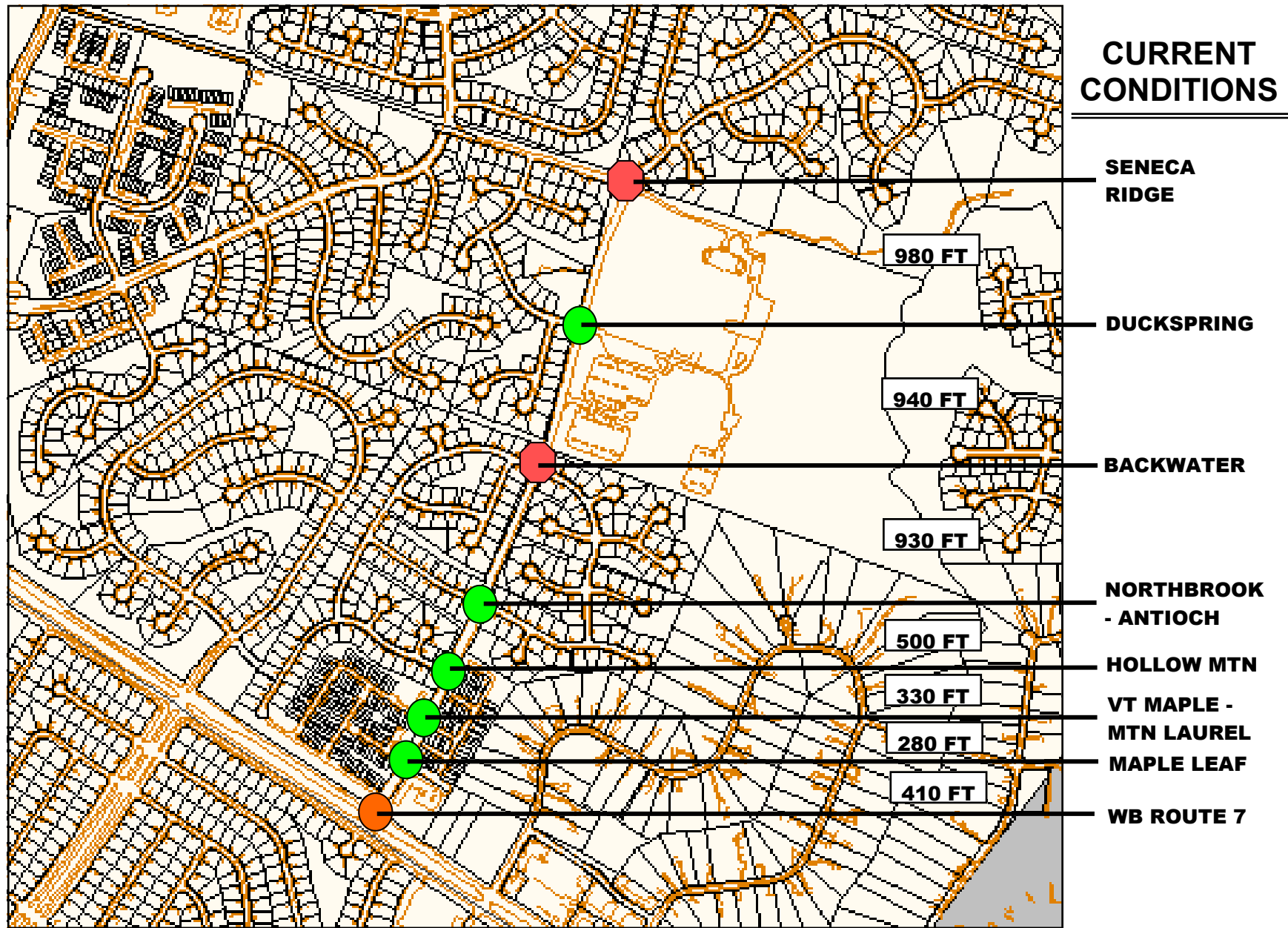
OTS staff recommends that a systems approach be considered for multi-way stop sign installation along Augusta Drive. Even though individual side street volumes and pedestrian crossing volumes may not meet the MUTCD thresholds, the design characteristics of Augusta Drive lend themselves to higher travel speeds and alternative means to artificially keep speeds down are limited. Certainly, higher vehicle speeds, coupled with the uninterrupted pavement width of a four-lane, undivided street, together create a sense of trepidation that discourages bicycle/pedestrian crossing traffic.

Minimum Distance Between Stop Signs

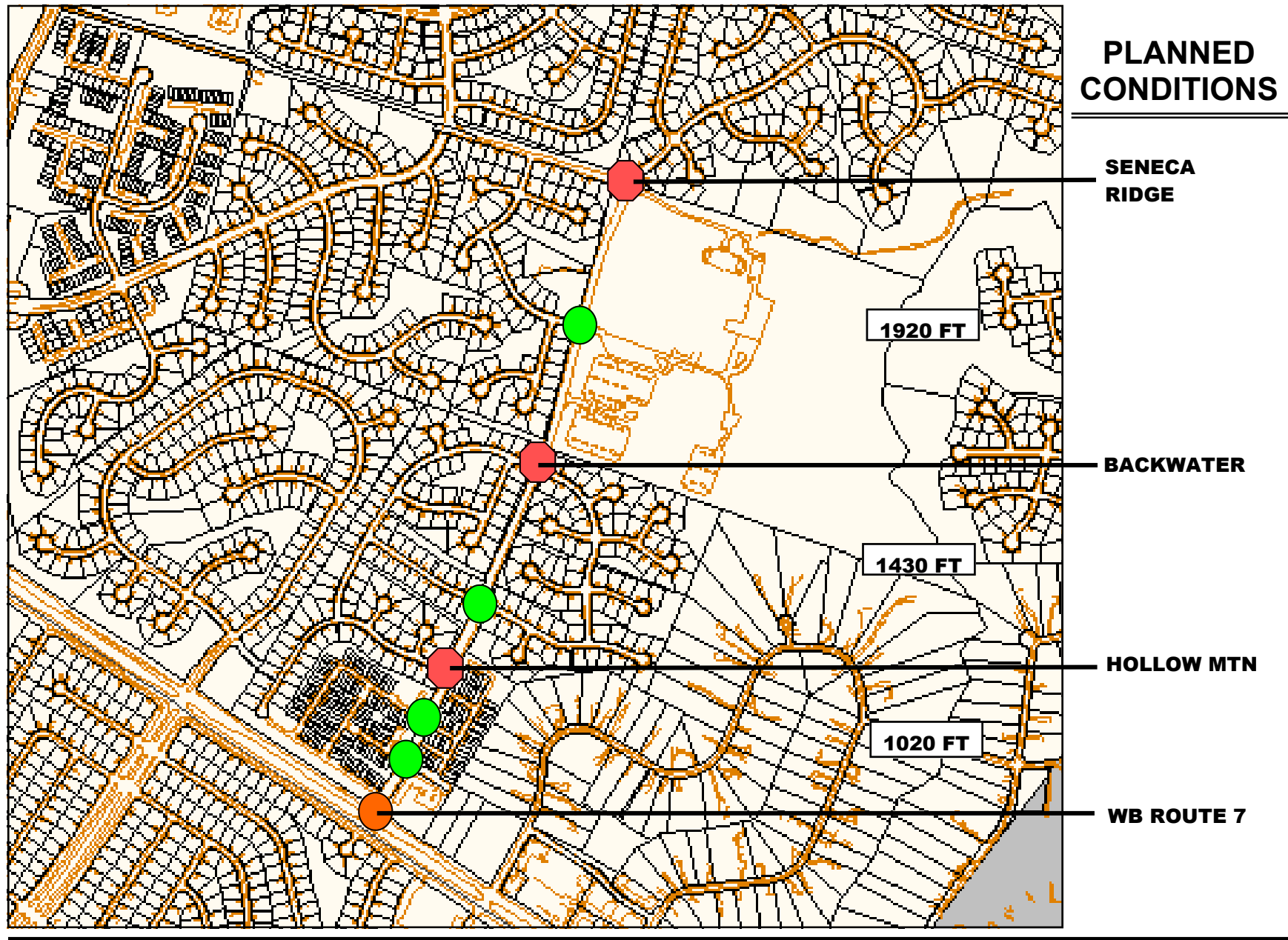


DESIGN CONSTRAINT

There needs to be at least 760 feet between multi-way stop signs for vehicles to comfortably achieve the posted speed of 35 mph. The [multi-way stop at Hollow Mtn. Place is beneficial](#) for calming speeds in excess of 40 mph.



Loudoun County Office of Transportation Services



Augusta Drive Phased Traffic Safety Improvements
REVISED DRAFT—May 2004

NOTE

The completion of the Route 7 North Collector Road will require a stop sign for SB Augusta Drive at the existing Maple Leaf Place intersection. When this happens, vehicles traveling south from Hollow Mountain Place will reach a maximum speed of 32 mph before having to decelerate in advance of Maple Leaf Place. Vehicles traveling south from Maple Leaf Place will reach a maximum speed of 27 mph. A reduction in the posted speed for Augusta Drive south of Hollow Mountain Place should be considered in this eventuality.



Identified Concern #2:

LIGHTING

**County has no direct role
in street lighting**

STATUS

Currently the developer of Richland Forest is having street lighting installed by Dominion Virginia Power and it should be activated shortly. The Augusta Drive/Backwater Drive intersection will have an illuminated "entrance" feature installed and Augusta Drive/Duckspring Way will have a similar illuminated "entrance" feature plus a street lamp.

Staff understands that the Richland Forest HOA reduced the number of street-lights the developer had expected to install due to residents' concerns of too much light. If the HOA desires to add street type lighting to other areas of the development, they have the option of hiring a contractor to install the lights in common space via metered service, or returning to Dominion Virginia Power for lighting under the "NightWatch" program. If additional lighting is needed in the right-of-way of Augusta Drive, a VDOT permit is required with appropriate long-term guarantee (bond). (Note: Dominion Virginia Power has a statewide guarantee for their lights in the ROW)

Identified Concern #3:

Mayapple Place & Duckspring Way

1. Cut-through traffic

**2. Bicycle/pedestrian
traffic crossing Augusta**

1. CUT-THROUGH TRAFFIC

History

Between October 1997 and January 1999, the Board of Supervisors considered abandoning a portion of Mayapple Place. At the time, the findings of traffic study indicated that establishing a cul-de-sac for the road was not warranted. In lieu of this closure, multi-way stop signs were installed along Mayapple Place to discourage southbound cut-through traffic.



Additional interest in discouraging cut-through traffic stems from the opening of Dominion High School and increasing traffic at the Seneca Ridge Drive/Augusta Drive intersection. The initial draft set of safety improvements included peak period turn prohibitions and intersection channelization for Duckspring Way at Augusta Drive.

Revised Recommendation

As an outgrowth of the Community Information Meeting, the installation of signs and channelization will no longer be pursued at this time. Rather, a NuMetrics study of traffic volumes and speeds will be conducted for Duckspring Way between Mayapple Place and Bullrush Place. This study will be conducted on a Tuesday through Thursday period during the fall of 2004, to coincide with the presence of a full senior class at Dominion High School.

Note

One of the residents of Duckspring Way expressed concern regarding potential spillover high school student parking along Duckspring Way. The Office of Transportation Services, the Sheriff's Department and the Treasurer's Office need to continue to work together to establish institutional arrangements for creating a revenue neutral Residential Parking District program in keeping with the draft ordinance language previously developed by OTS.



2. BICYCLE/PEDESTRIAN TRAFFIC CROSSING AUGUSTA

Current Conditions

Office of Transportation Services personnel observed bicycle & pedestrian traffic to and from both Seneca Ridge Middle School and Dominion High School during the 2003-2004 academic year.

During these visits it was observed that middle school students used the trails from Sugarland Run and Seneca Ridge and sidewalks along Augusta Drive to get to the Augusta/Seneca Ridge intersection where they crossed the street(s) under the control of a Sheriff's Department Crossing Guard. No middle school students were observed crossing Augusta Drive at Backwater Drive or Duckspring Way or jaywalking between intersections. Parents dropping students off at the middle school in the morning gridlocked the driveway leading to Seneca Ridge. Since the completion of Dominion High School the buses have avoided the gridlock by using the common bus entrance which might be considered a pathway to relieving the gridlock at the middle school.

High school students arrived at school by bus, car, bicycle or foot. Bicyclists and pedestrians were observed crossing Augusta Drive at the Duckspring Way/ School Bus Driveway intersection. Most of the time, there was very little conflict with vehicles due to the large gaps in traffic on Augusta. No pedestrian was delayed for more than a minute or two crossing Augusta nor were they rushed while crossing the street. Bicyclists tended to dart across Augusta faster and the bus drivers appeared to lose sight too quickly thereby causing some conflict. Buses were observed rolling past the stop signs and through the crosswalks frequently before stopping for Augusta. It was reported, but not observed, that a bus almost hit a child trying to use the crosswalk of the School Bus Driveway.

Recommendations

A crosswalk at Duckspring Way should not be implemented unless and until proper State Law—Yield to Pedestrian signs can be erected. Further, due to the likelihood of obstructing vehicles and the 35 mph posted speed, some type of pedestrian actuated advance warning (e.g., flashing lights) system should be investigated in conjunction with establishing a crosswalk.

Identified Concern #4:

PEDESTRIAN **CIRUCLATION**

Missing sidewalks along:

- 1. Augusta Drive**
- 2. Seneca Ridge Drive**

**Crosswalk for Westerley
pool/common area**

CONSTRUCT MISSING SIDEWALK/TRAIL LINKS

Given the traffic volumes and speeds along Augusta Drive, it is not reasonable to expect pedestrians to cross Augusta Drive twice in order to make use of the sidewalk constructed along one side of this road.

An analogous situation appears to exist along Seneca Ridge Drive at Cottage Road, where pedestrians need to cross the busy Seneca Ridge Drive approach to access the existing trail connection to Augusta Drive.

AUGUSTA DRIVE—ANTIOCH PLACE TO MAPLE LEAF PLACE

The approved plans for the Westerley subdivision do not depict a sidewalk along the east side of Augusta Drive in this vicinity. From initial inspection, it would appear that the existing right-of-way has been graded properly to allow for the future construction of this sidewalk. Indeed, the handicap ramps that would be required at all side street intersections have already been installed to serve the existing side street sidewalks.



Existing Augusta Drive—looking northward toward Antioch Place



Same location showing proposed sidewalk

STATUS

The Board of Supervisors approved submitting a TEA-21 Enhancement Grant for federal funds in the amount of \$48,000 to construct this sidewalk. The Office of Transportation Services acquired engineering consulting services to design the sidewalk for County and VDOT acceptance through the use of an existing civil design task order contract.

SENECA RIDGE DRIVE—MISSING SEGMENT AT COTTAGE ROAD

The need to construct a missing segment of sidewalk on Seneca Ridge Drive to serve Cottage Road appeared as a recurrent comment received as a result of the Community Information Meeting. The segment in question would connect existing sidewalks along the south side of Seneca Ridge Drive and the east side of Cottage Road. Although the proposed improvement lies beyond the limit of the study area, the suggestion certainly merits further consideration.

OTS plans to evaluate traffic operations at the intersection of Seneca Ridge Drive and Cottage Road in the immediate future. This evaluation is in response to complaints of excessive queuing for vehicles attempting to turn left onto southbound Cottage Road from Seneca Ridge Drive as well as bicycle/pedestrian crossing concerns. The need for and opportunities to provide the missing sidewalk connection will be incorporated into this study.

CROSSWALK FOR WESTERLEY POOL/COMMON AREA

Residents of the Westerley community expressed concern that the planned crosswalk at Hollow Mountain Place was inconvenient for residents would otherwise cross Augusta Drive at either of the adjoining two intersections (i.e., Vermont Maple/Mountain Laurel Terrace and Northbrook Way/Antioch Place). The dilemma in establishing these crosswalks is largely the same as previously documented for the Duckspring Way intersection. That is, that the volume of crossing vehicular and pedestrian traffic does not warrant an additional stop sign, while the conflicting turning movements can obscure pedestrians from oncoming traffic. Moreover, installing additional stop signs in these locations would violate the design speed standard of Augusta Drive and lead to increased disregard of regulatory signs along this road.

At the same time, it is acknowledged that the crosswalk at Hollow Mountain Place will indeed be overly circuitous for residents of the townhome section of Westerley until such time as the Maple Leaf Place crosswalk is added in conjunction with the completion of the Route 7 North Collector Road. For this reason, **staff recommends that a crosswalk be implemented at the Vermont Maple/Mountain Laurel Terrace intersection with pedestrian actuated flashing lights**

and proper signage indicating that motorists are required to stop for pedestrians in the crosswalk under state law. Further, a study of the magnitude of pedestrian crossing traffic at the Northbrook Way/Antioch Place intersection needs to be conducted after crosswalks are implemented at Backwater Drive and Hollow Mountain Place.

SUMMARY

Revised Recommendations

INTERSECTION IMPROVEMENTS

Intersection	Improvement	Phase	Cost
Seneca Ridge Drive	Streetprint® crosswalks	II	\$14,500
Duckspring Way	Study Pedestrian Crossing & cut through volumes (fall 2004)	I	\$7,000
Backwater Drive	Streetprint® crosswalks	II	\$20,400
Northbrook Way/Antioch Place	Study Pedestrian Crossing Volumes	I	\$5,000
Hollow Mountain Place	Multi-way stop signs, Streetprint® crosswalks	I II	\$1,500 \$16,100
Vermont Maple Terrace/ Mountain Laurel Terrace	Crosswalk with ped activated flashing warning signs, Streetprint® crosswalks	I II	\$10,000 \$20,400
Maple Leaf Place	Crosswalk with ped activated flashing warning sign, southbound stop sign, Streetprint® crosswalks	III	\$21,000
TOTAL			\$115,900

ADDITIONAL CORRIDOR IMPROVEMENTS

Location(s)	Improvement	Phase	Cost
EB Seneca Ridge Drive, west of Augusta Drive; SB Augusta Drive, north of Duckspring Way; NB Augusta Drive south of Mountain Laurel Terrace	Three pedestrian warning signs (MUTCD Std. W11-2)	I	\$750
Hollow Mountain Place to Vermont Maple Terrace/Mountain Laurel Terrace	Plan Development	I	\$6,000
Antioch Place to Maple Leaf Place	Install sidewalk	II	\$60,000
Maple Leaf Terrace	Plan Development	III	\$2,000
TOTAL			\$68,750

TOTAL COST BY PHASE

Phase	Cost
I	\$30,250
II	\$131,400
III	\$23,000
TOTAL	\$184,650